

1 **Internet Access of Goods and Services Using Graphical Codes**

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3 **Field of the Invention**

4 This invention relates generally to the displaying and scanning of graphical codes on objects
5 to provide Internet access. More particularly, the present invention is a system where a graphical
6 code is displayed on or in some communications media (such as a magazine or television) for
7 scanning by a user to obtain present or future Internet access to the Internet address represented by
8 the graphical code.

9 **Background of the Invention**

10 Supermarkets and department stores have been using bar code scanning systems for years for
11 identification and inventory purposes. Almost every product in a store has it's own unique bar code
12 on the product's packaging. The use of bar codes is no longer limited to just providing the price of
13 an item. For instance, U.S. Patent No. 5,612,527 to Ovadia, relates to a coupon redemption system,
14 where a bar code contains not only information about the amount of the discount and the expiration
15 date of the coupon, but also the address of the consumer who received the coupon in the mail. By
16 including the address of the coupon user, the purchasing habits of the shopper can be tracked.

17 The use of bar codes has expanded into other markets as well. For example, U.S. Patent No.
18 5,465,291 to Barrus et al, discloses bar codes for placing purchase orders from remote locations,
19 where a purchase order is created by scanning bar codes and transmitting the purchase order to a
20 remote location using a modem or a touch tone phone. Similarly, U.S. Patent No. 5,047,614 to
21 Bianco, relates to computer aided shopping. Here, a user creates a purchase order by scanning bar

1 codes from items such as containers, coupons, advertisements or pamphlets which are furnished by
2 a store. The purchase order can then be transmitted to the store or warehouse.

3 Non-consumer uses have also been developed. For example, U.S. Patent No. 5,604,640 to
4 Zipf et al., relates to a business card scanner, wherein relevant information such as telephone
5 numbers, fax numbers and addresses are stored on a business card using bar codes. The stored
6 information can then be scanned to provide data information to the user or to produce a database.

7 The demand to store more data has also increased. In order to encode more information, bar
8 codes have expanded in both the x and in the y directions, thereby increasing the size of the bar
9 codes. However, by increasing the size of the bar code on an object or media , there is less room on
10 the object or media for other pertinent information.

11 Other means to increase the amount of encoded data have also been exploited. One alternate
12 form for encoding data is set forth in U.S. Patent No. 5,483,052 to Smith, III et al., which discloses
13 a system capable of reading, storing and using data from a business card or other printed material
14 having high density bar-encoded data. Similarly, U.S. Patent No. 5,493,105 to Desai discloses an
15 electronic business card system to either read or store data on an electronic strip located on an
16 electronic business card. The electronic business card system can also include a telephone interface
17 wherein the system can call preselected numbers. Similarly, U.S. Patent No. 5,153,418 to Batterman
18 et al., claims multiple resolution machine readable symbols, where high and low resolution data is
19 encoded in a graphical code. Additionally, U.S. Patent No. 5,223,701 to Batterman et al. claims a
20 system process and apparatus using multiple resolution machine readable symbols. This system
21 encodes high and low resolution data in a graphical code.

With Internet addresses a key means of marketing and communications, as well as longer Internet addresses and the number of data encoded applications rising, the need for the ability of graphical codes to depict or represent more information also increases. Thus there is not only a demand for the increased ability of graphical codes to depict or represent more information but there is also a demand for an encoding system where the Internet address and other additional information can be encoded in a small, durable and flexible graphical code without occupying a significant area of the media on which it is printed or displayed.

A need therefore exists for graphical codes that can be printed on an object and eventually scanned to provide the Internet address represented by the graphical code.

Summary of the Invention

It is therefore an object of the present invention to provide Internet access to an Internet address represented by a graphical code by scanning that graphical code.

A further object of the present invention is to store the Internet address represented by the graphical code after scanning the graphical code.

A further object of the present invention is to directly input the Internet address represented by the graphical code into a query of a Web browser.

A further object of the present invention is to scan the graphical code from a physical three dimensional object as a means to access the Internet address represented by the graphical code.

A further object of the present invention is to scan the graphical code from printed media as a means to access the Internet address represented by the graphical code.

A further object of the present invention is to scan the graphical code from a credit card as

1 a means to access the Internet address represented by the graphical code.

2 A further object of the present invention is to scan the graphical code from a video monitor
3 as a means to access the Internet address represented by the graphical code.

4 A further object of the present invention is to generate statistics from users who access the
5 Internet address from scanning the graphical code.

6 A further object of the present invention is to generate marketing statistics from users who
7 access the Internet from scanning the graphical code.

8 A further object of the present invention is to limit the size of the graphical code to the size
9 of a line of text.

0 The present invention is a system that allows a user to obtain Internet addresses and to access
1 those addresses by scanning a graphical code on an object or displayed on a monitor. The present
2 invention uses a scanner connected to a computer to scan a graphical code to obtain the Internet
3 address represented by the graphical code. Once the information is captured by the scanner three
4 options are provided: i) automatic access to the Internet address represented by the graphical *code*,
5 ii) automatic storage of the Internet address represented by the graphical code in the memory of a
6 computer or scanner for later access or iii) automatic input of the Internet address represented by
7 the graphical code into a query of a Web browser to be accessed via user control.

8 The process for all three options is similar: a person elects an option, then scans the graphical
9 code with a scanner, the scanner reads the graphical code and generates data from the graphical code,
0 the data is then transmitted to a computer where depending on the option selected, the computer
1 automatically executes the elected option. The computer will automatically access to the Internet

1 address represented by the graphical code, store the Internet address or input the Internet address
2 into a query of a Web browser.

3 **Brief Description of the Drawings**

4 Figure 1a shows a multiple resolution graphical code.

5 Figure 1b shows a multiple resolution graphical code viewed at low resolution.

6 Figure 2 shows the scanning system.

7 Figure 3a shows the steps of providing the public with graphically encoded objects.

8 Figure 3b shows the different options given a user once a graphically encoded object is
9 scanned.

10 Figure 4 shows the detailed steps for automatic access to the identified Internet address.

11 Figure 5 shows the detailed steps for automatic storage of the identified Internet address into
12 memory.

13 Figure 6 shows the detailed steps for automatic input of the identified Internet address into
14 a query of a Web browser.

15 **Detailed Description of the Invention**

16 U.S. Patent No. 5,153,418 to Batterman et al., Multiple Resolution Machine Readable
17 Symbols and U.S. Patent No. 5,223,701 to Batterman et al., System Method and Apparatus Using
18 Multiple Resolution Machine Readable Symbols are herein incorporated by reference.

19 For purposes of this specification "object" shall mean any or all of these media where a
20 graphical code can be seen by a user and scanned by the scanner of the present invention; "graphical
21 code" shall mean any and all graphical codes, incorporating bar codes and the graphical codes as

1 described in U.S. Patent No. 5,153,418 to Batterman et al.

2 Referring to **Figure 1a**, a multiple resolution graphical code **101** is shown. The graphical
3 code includes both low resolution encoded data cells **12** and high resolution encoded data cells.

4 Referring to **Figure 1b**, a multiple resolution graphical code **111** is shown. The graphical
5 code is viewed at low resolution showing low resolution data cell **113**. The graphical code can be
6 displayed onto almost any object or media. Displaying a graphical code includes printing the
7 graphical code onto an object or displaying the graphical code on a video monitor. The objects can
8 include any physical three dimensional object, video monitor, printed media, printed materials,
9 letters, documents, promotional materials, credit cards, business cards, magazine articles or
10 advertisements, newspaper articles or advertisements, newsletters, catalogs or the like. A user
11 simply scans the graphical code of an object to obtain the Internet address represented by the
12 graphical code. The user can use any commercially available scanner capable of reading graphical
13 codes. Since the storage capability of graphical codes is greater than the storage capacity of a bar
14 code, the Internet address represented by the graphical code can be one of many different items of
15 data encoded in one graphical code. For instance, a graphical code can include the Internet address,
16 street address and telephone number. In addition, the graphical code can be single, two or multi-
17 dimensional to provide additional information. An object can also include more than one graphical
18 code to provide additional information.

19 The graphical code can include additional information relating to the object's origin, the
20 equipment used to manufacture the object, the location of the equipment used to print the graphical
21 code, the equipment used to print the graphical code, mailing address of the recipient of the object

1 containing the graphical code, where an item was purchased, or the type of object the graphical code
2 was printed or displayed upon. By scanning the graphical code and connecting to the Internet
3 address that the graphical code represents, the represented graphical code owner can use the number
4 of "hits", i.e., the number of times someone contacts the Internet address that the graphical code
5 represents, to compile statistics. The statistics can then be used to provide information such as,
6 marketing demographics or marketing power of the product or object.

7 Referring to **Figure 2**, an Internet access system **201** for scanning graphical codes is shown.
8 The optical scanning system **201** includes computer **207** having memory and a processor, monitor
9 **205**, optical scanner **209** and keyboard **203**. An object having a graphical code with an encoded
10 Internet address is scanned by optical scanner **209**, the scanned data is then transmitted to computer
11 **207** where the data is processed to identify the encoded Internet address.

12 Once the Internet address is identified, there are three different options available depending
13 on where the user inputs the scanned data from the graphical code: (i) direct access to the Internet
14 address represented by the graphical code, (ii) storing the Internet address represented by the
15 graphical code in the memory of the computer or scanner or (iii) inputting the Internet address
16 represented by the graphical code into a query of the user's Web browser to be accessed via user
17 control. Identifying the encoded Internet address includes decoding the graphical code into a format
18 the computer can implement for additional uses. All three options work in a similar manner.

19 Referring to **Figure 3A**, the steps of providing the public with graphically encoded objects
20 is shown. The process starts by encoding an Internet address into a graphical code **301**. Next, the
21 graphical code is printed onto an object **302** for later access by a user interested in the Internet

1 address represented by the graphical code. The graphically encoded objects are then disseminated
2 to the public 305. In an alternative embodiment, the graphical codes can be displayed on a screen
3 or monitor in conjunction with an advertisement.

4 The graphical codes can be single, double or multi-dimensional. In the preferred
5 embodiment, the graphical code is two dimensional, and limited in height to a single line of type.
6 The number of dimensions that a graphical code requires is influenced by the amount of data and
7 cost factors. As noted above, the size of the graphical code is limited to the size of one line of text
8 to preserve other space on the media on which the code is displayed. The preferred size of the
9 graphical code can be in the range of about six to twenty (6-20) point type which is equivalent to
10 about 2.12 to 7.06 millimeters. However, in practical terms, there is no limit to the size of the code
11 so long as it fits within the vertical dimension of a single line of type, whatever the type size may be.
12 Since the graphical code can be included in an advertisement or article, the graphical code should
13 not require more space than necessary to allow more space for additional pertinent information.

14 Referring to **Figure 3B**, the different options relative to scanning and interpreting graphical
15 codes that are available to a user are shown. First, the user obtains a graphically encoded object 311.
16 Once an object is obtained for scanning, the user needs to choose which option to pursue 313:
17 automatic access to the identified Internet address 315, automatic storage of the identified Internet
18 address 317 or automatic input of the identified Internet address into a query of a Web browser 319.

19 Referring to **Figure 4**, the option for automatic access to the Internet address represented by
20 the graphical code is illustrated. Using a scanner, a user scans a graphical code 401. Next, the
21 scanner reads the graphical code and generates data 403. The optically scanned data is then

1 transmitted to a computer for processing **405**. The computer decodes and identifies the Internet
2 address represented by the graphical code **407**. The last step is automatic access to the identified
3 Internet address **409** represented by the graphical code. For the last step, the Internet address is
4 automatically entered into a query where the computer automatically accesses the Internet address
5 represented by the graphical code. The connection means typically consists of a modem and
6 software designed to provide access to the Internet.

7 Referring to **Figure 5**, the option for automatic storage of the identified Internet address is
8 illustrated. Using a scanner, a user scans a graphical code **503**. Next, the scanner reads the
9 graphical code and generates data **505**. The optically scanned data is then transmitted to a computer
10 for processing **507**. The computer decodes and identifies the Internet address represented by the
11 graphical code **509**. The last step is automatic storage of the identified Internet address into the
12 memory of the computer **511**. The data can also be stored into a database or the memory of a Web
13 browser.

14 In an alternative embodiment, the scanner can include memory. Using the scanner, a user
15 scans a graphical code. The scanner reads the graphical code and generates data. The data can then
16 be stored into the memory of the scanner. At a later time, the scanner can be connected to a
17 computer and the stored data can be transferred to the computer. The transferred data is then
18 processed, where the computer decodes and identifies the Internet address represented by the
19 graphical code. The scanner can store data from multiple scanned graphical codes. In another
20 embodiment, the scanner can also include processing capabilities to decode and identify Internet
21 addresses from graphical codes. As a result, the scanned data can be downloaded to a computer, into

1 the memory of a computer or into a Web browser.

2 In another embodiment the scanner can be portable, thereby allowing a user to scan multiple
3 graphical codes and download the information to a computer at a later time. In yet another
4 embodiment, the scanner can be an infrared scanner. The use of an infrared scanner provides the
5 user the capability of performing wireless scanning of data with the scanned data being transferred
6 in a real time mode or with the data being stored and being transferred at a later time.

7 Referring to **Figure 6**, the option for automatic input of the identified Internet address into
8 a Web browser's query is illustrated. Using a scanner, a user scans a graphical code **601**. Next, the
9 scanner reads the graphical code and generates data **603**. The optically scanned data is then
transmitted to a computer for processing **605**. The computer decodes and identifies the Internet
address represented by the graphical code **607**. The last step is automatic input of the identified
Internet address into a query of a Web browser, where the user is prompted to access, store or delete
the identified Internet address **609**.

How to Use

5 The following are examples of how the graphical codes can be implemented. A user is
drinking a soda with an advertisement for a contest on the soda can, the user simply scans the
17 graphical code on the can to obtain access to the soda manufacturer's Internet site. Once at the
18 Internet site, the user can obtain more details on the product and the contest. If the user can already
19 be logged on the Internet and wants to look at the Internet site but at a later time, the user simply
20 scans the graphical code and stores the Internet address into the memory of the computer. The user
can also scan the graphical code and have the Internet address automatically entered into a query of

1 the user's Web browser, where the user has the option of choosing to access the Internet site, store
2 the Internet address or to delete the Internet address.

3 A user can also access the Internet site of a company that advertises in a magazine. Presently,
4 a large number of magazines have advertiser cards in a magazine where a reader selects the products
5 about which the user would like to obtain additional information mails the card to the magazine. The
6 magazine then informs the advertiser which then sends the selected literature to the reader. Instead
7 the Internet addresses of the advertisers can be graphically encoded into the advertisements, together
8 with information identifying the media carrying the code. The user scans the graphical codes and
9 accesses the Internet addresses represented by the graphical code. The user obtains the product
10 information in a quicker and more efficient manner.

11 The graphical code can also include information to help the manufacturer to determine the
12 effectiveness of their advertisements. When the graphical code is scanned, the scanned data can also
13 include information such as what type of object the graphical code was printed or where the
14 consumer purchased the object, etc. The scanned data can be also be transferred to the Internet
15 address site when the user accesses the Internet site. By knowing what advertisement, or object, the
16 user scanned the data from, the manufacturer can determine the effectiveness of their advertisements.
17 By knowing where the user purchased the object containing the graphical code, the manufacturer can
18 also determine the effectiveness of its distributors. The additional information that a manufacturer
19 can obtain from the scanned graphical codes can provide very effective marketing information about
20 their products or advertisements.

21 Although the apparatus and process of the present invention have been described in detail

1 for purpose of illustration, it is understood that such detail is solely for that purpose, and variations
2 can be made therein by those skilled in the art without departing from the spirit and scope of the
3 invention. The apparatus and process of the present invention is defined by the following claims.
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